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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/287,406 04/06/99 SHINBATA

H 1232-4532

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WM31/1024

EXAMINER

CHOOBIN, M	
ART UNIT	PAPER NUMBER

2621

DATE MAILED:

10/24/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/287,406

Applicant(s)
Shinbata

Examiner
Choobin Mahmood

Art Unit
2621



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21, 22, 25, and 28 is/are allowed.
- 6) ☒ Claim(s) 1-18, 20, 23, 24, 26, and 27 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2, 7, 8, 9, 10, 11, 23, 24, 26 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Funahashi et al (U.S. Patent 4,859,850).

As to claims 1, 2, 9, 23, 24, 26 and 27, Funahashi et al disclose an image processing method comprising:

a step of determining a plurality of areas arranged in a predetermined direction on an image and each having a predetermined shape (column 5, lines 28 - 33 wherein "sample image signals at an arbitrary picture element string, which extends from an edge of the recording region" corresponds to plurality of areas);

a step of calculating a secondary difference value of density values representing the respective areas in said plurality of areas (column 5, lines 33 - 39 wherein "calculating differences between imaginary image density level calculated by use of approximated equation and actual image density" corresponds to calculating secondary difference value); and

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a step of judging one end point of an irradiation area from said secondary difference values calculated in said calculating step (column 5, lines 44 - 50 wherein "recognizing a region extending up to a picture element, at which said difference comes up to a predetermined value).

As to claim 7, Funahashi et al disclose density values representing the respective areas in the plurality of areas are calculated using integrated values in a predetermined direction of pixels in said plurality of areas (column 6, lines 5 - 14, wherein "... said picture element as viewed in the direction from said edge of recording region towards the center of recording region as irradiation field..." corresponds to predetermined direction).

As to claim 8, Funahashi et al disclose density values representing the respective areas in said plurality of areas are obtained by smoothing said integrated values (column 13, lines 65 - 68 "filter 303").

Claims 10 and 11 are similarly analyzed and rejected.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 - 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funahashi et al (U.S. Patent 4,859,850) in view of Osbourn (U.S. Patent 5,495,536) .

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As to claims 3 - 6, Funahashi et al fail to disclose an average density representing respective areas.

But, on the other hand, Osbourn discloses in An image processing system and method for recognizing and removing shadows from the image of the monitored scene, an average density over a width and a height in order to suppress high frequency aliasing and ensure that only relevant first differences signals will be used in detection of mach edges (column 7, lines 40 - 59).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the average density of Osbourn with the work of Funahashi et al in order to ensure that only relevant first differences signals will be used in detection of mach edges.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12 , 13, 14, 15, 16, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funahashi et al in view of Kido et al (U.S. Patent 5,732,149).

As to claim 12, Funahashi et al disclose an image processing method for judging whether an object area in an image includes an irradiation area, said method comprising:
a secondary difference value acquisition step of acquiring secondary difference values from one dimensional image data of said object area (see claim 1);

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{But Funahashi et al fail to disclose an irradiation end extraction step of extracting a coordinate of an end point of said irradiation area from the secondary difference values acquired in said secondary difference value acquisition step. On the other hand, Kido et al in Apparatus for extracting an irradiation field region from a radiation image disclose extracting a coordinates of the end point or the irradiation area (column 8, lines 46 - 59 and Fig. 5, wherein the extraction of an irradiation field region is explained ... “the position of image data in the rectangular coordinates provided along the sides of the image is rotated around a predetermined rotation axis” corresponds to extracting a coordinates of the end point or the irradiation area). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the “extracting a coordinates of the end point or the irradiation area” of Kido et al with the work of Funahashi et al in order to rotate the image around a predetermined rotation axis and to improve the boundary extraction or end point.};

a comparison step of comparing the coordinate extracted in said irradiation end extraction step with a coordinate of an end point of the irradiation area included in said image, said coordinate being obtained preliminarily (see claim 1); and

a judgment step of judging whether said object area includes the irradiation area, based on the result of the comparison in said comparison step (see claim 1).

As to claim 13, Kido et al disclose judgment step comprises a step of judging that said object area does not include the irradiation area, if the coordinates are close to each other, or otherwise judging that said object area includes the irradiation area (column 9, lines 4 - 9).

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Claims 14, 15, 16, 17, 18, 20, 23, 24, 26 and 27 are similarly analyzed and rejected.

Allowable Subject Matter

7. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 21, 22, 25 and 28 are allowable.

OTHER PRIOR ART CITED

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5151947 to Nagatsuka et al is cited for Method and apparatus for processing radiation image.

U.S. Patent 5892840 to Jang et al is cited for Method and apparatus for irradiation field detection in digital radiographic images.

U.S. Patent 6061465 to Nakajima is cited for Radiation image processing method and apparatus.

U.S. Patent 6243485 to Murakami is cited for Method and apparatus for recognizing irradiation fields on radiation images.

CONTACT INFORMATION

Any inquiry concerning this communication from the examiner should be directed to Mahmood Choobin whose telephone number is (703) 306-5787. The examiner can normally be

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reached on Monday through Friday from 8:00 a.m. to 4:30 p.m. If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached at (703) 305-4706. Any response to this action should be mailed to: Commissioner of Patents and Trademarks Washington, D.C. 20231 Faxed to: (703) 872-9314, (for formal communications intended for entry), (703) 308-5397 (for informal or draft communications, please label "PROPOSED" or "DRAFT").


Hand delivered responses should be brought to Crystal Park 11, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703)305-3900.

Mahmood Choobin Patent Examiner

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October 16, 2001



LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600